

What is claimed is:

1. A wiring layer structure connected to a first electrode of a ferroelectric capacitor having first and second electrodes, comprising a main wiring layer and a coating layer on the outer periphery of this main wiring layer;

wherein said main wiring layer comprises a first material that reacts with a substance that infiltrates from the outside to this main wiring layer and produces a reducing agent; and

wherein said coating layer comprises a second material that is conductive and prevents infiltration into said main wiring layer of said substance.

2. The wiring layer structure according to Claim 1, wherein said first material is aluminum (Al).

3. The wiring layer structure according to Claim 1, wherein said second material is titanium nitride (TiN).

4. The wiring layer structure according to Claim 1, wherein said second material is titanium (Ti).

5. The wiring layer structure according to Claim 1, wherein said second material is titanium nitride (TiN) and titanium (Ti).

6. The wiring layer structure according to Claim 1, wherein said coating layer comprises a first coating part provided between said main wiring layer and said first electrode; a second coating part provided on the surface of the side opposite said ferroelectric capacitor of the main

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wiring layer; and a third coating part provided on side faces of said main wiring layer.

7. The wiring layer structure according to Claim 6, wherein said first, second, and third coating parts are titanium nitride (TiN) films.

8. The wiring layer structure according to Claim 6, wherein said first and third coating parts are titanium nitride (TiN) films, and said second coating part is a built-up film composed of a titanium (Ti) film and a titanium nitride (TiN) film.

9. The wiring layer structure according to Claim 6, wherein said first coating part is a titanium nitride (TiN) film, and wherein said second and third coating parts are built-up films composed of a titanium (Ti) film and a titanium nitride (TiN) film.

10. The wiring layer structure according to Claim 6, wherein said first coating part is a titanium nitride (TiN) sputtering film, and said second and third coating parts are TiN-CVD films.

11. The wiring layer structure according to Claim 6, wherein said first and second coating parts are TiN-sputtering films, and said third coating part is a TiN-CVD film.

12. The wiring layer structure according to Claim 6, wherein said first coating part is a TiN-sputtering film, said second coating part is a built-up film composed of a Ti-sputtering film and a TiN-sputtering film, and said third

coating part is a TiN-CVD film.

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5 13. The wiring layer structure according to Claim 6,  
wherein said first coating part is a TiN-sputtering film,  
said second coating part is a built-up film formed from a Ti-  
sputtering film and a TiN-sputtering film, and said third  
coating part is a built-up film formed from a Ti-CVD film and  
a TiN-CVD film.

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10 14. The wiring layer structure according to Claim 1,  
wherein said substance infiltrating from the outside is  
either water ( $H_2O$ ) or hydrogen ( $H_2$ ).

15. The wiring layer structure according to Claim 1,  
wherein said reducing agent is either a hydrogen radical ( $H^*$ )  
or hydrogen ( $H_2$ ).